Financial System Replacement
System Requirements Specification
Version 2.1
December 15, 2003

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Revisions

Version	Date	Comments
1.0	December 3, 2003	Initial baseline
2.0	December 15, 2003	ERB and OIG Modifications

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1 Introduction

1.1 Purpose

This specification establishes *system requirements* for the Financial System Replacement (FSR) project. By system requirements are meant those requirements that generally apply to the system as a whole. This specification provides guidance for evaluating vendors and products and preparing tests for the acceptance of deliverables.

1.2 Scope

This specification derives its authority from the FSR's Project Definition Document approved by the Committee on House Administration [Reference 1.4-1].

This specification covers certain requirements for the acquisition, startup, and operation of a new system to replace a number of loosely integrated financial applications at the U.S. House of Representatives. It includes, by reference, the *Technical Requirements* of the *Core Financial System Requirements* [Reference 1.4-4] of the *Joint Financial Management Improvement Program* (JFMIP).

The version of the *core financial software* selected for the FSR will have current JFMIP certification, at the time of their delivery to the House. The certification is a mandatory requirement.

This specification may augment some JFMIP requirements in order to meet the needs of the CAO. It may also copy other JFMIP requirements verbatim in order to have them re-tested by FSR. Therefore, **requirements stated in this specification shall only add to related JFMIP requirements and shall not supercede them**.

History of changes made to original requirements from [Section 3.0, Reference 1.4-2] are included in Appendix F. The original requirement numbers are retained for traceability. Most of these requirements are replaced with new ones; the rest are removed or moved to another specification.

This specification does not cover *functional requirements.* Cross-references to functional requirements documents [References 1.4-3 and 1.4-4] are provided for clarification.

1.3 Definitions, Acronyms, and Abbreviations

See Appendix A.

1.4 References

1. *Financial System Replacement Project Definition Document,* approved by the Committee on House Administration on July 2001.
2. *Financial System Replacement Project,* Volume III, *System Requirements,* 24 August 2001, prepared under Contract #GS-23F-9755H by Booz Allen & Hamilton.
3. Functional Requirements Specification, December 2003.
4. *Core Financial System Requirements, Joint Financial Management Improvement Program* Publication JFMIP_SR-02-01, November 2001. Web page: http://www.jfmip.gov/jfmip/systemrequirements.htm
5. House Information Security Policies (HISPOL) (http://www.house.gov/cao-opp/currentsol.htm)

1.5 Document Overview

This specification follows IEEE Standard 830-1998, particularly its Section 3, *Specific Requirements*

Section 2 describes general factors that affect the target product and its requirements. This section does not state specific requirements. Instead, it provides a background for those requirements, making them easier to understand. To that end, it presents a product perspective; lists the constraints, assumptions, and dependencies; and identifies requirements that are delayed until future versions of the system.

Section 3 states specific requirements on:

- External Systems
- Users and Administrators
- Performance Requirements
- Logical Database Requirements
- Design Constraints
- System Attributes
- Security
- Reliability
- Availability
- Recoverability
- Transactional Properties
- Maintainability
- Portability
- Scalability
- Auditability
- Usability
- Migration and Transition Requirements
- Data Conversion
- Operation and Maintenance Requirements
- Backup and Recovery
- JFMIP Technical Requirements

Where requirements involve a large amount of similar data, such as external interfaces, or self-contained data, such as user scenarios, the data is collected in appendices.

Section 4 traces the requirements in this specification to those in higher-level documents, if any.

2 Overall Description

This section describes general factors that affect the target product and its requirements.

2.1 Product Perspective

FSR is to be a system of financial applications deployed on the House network, which covers Member offices all over the United States. Members and their staff expect it to be secure, reliable, and highly available. Hence, the emphasis in this specification is on system security, transactional integrity, and system availability.

FSR is to be realized with commercial off-the-shelf (COTS) products. The COTS approach is sensitive to both under- and over-specification, which result in either too many or too few products being eligible for evaluation. This specification strives for a balance between what is ideal and what is available on the market.

2.2 Product Functions

Not applicable. Refer to [Reference 1.4-3].

2.3 User Characteristics

FSR *end users* work in Member, Committee, Officers of the House (*e.g*. CAO, Clerk, Sergeant at Arms), and other House support offices (*e.g*. Law Revision Counsel, Inspector General, General Counsel). They submit transactions, approve transactions, run canned queries, and generate canned reports. There is nothing *ad hoc* about their use of the system. Most log on occasionally and stay on just as long as it takes to do their chores. Some accounting and budget personnel log on in the morning and stay on for the entire day.
FSR *power users* do everything end users do. In addition, they have read access to daily, monthly, and year-to-date journals.

FSR *administrators* create new user accounts, maintain existing user accounts, run ad hoc queries, and generate ad hoc reports. They enforce system security policies. They keep the system auditable.

In this document, the unqualified term *user* includes all of the above.

2.4 Constraints

1. **Only Oracle databases shall be used.** As a result of this constraint, the exact version of *Structured Query Language* (SQL) and *stored procedure* syntax applicable to FSR requirements cannot be determined until procurement.
2. **Application servers shall run on platforms with Unix or Microsoft Windows operating systems only.**

2.5 Assumptions and Dependencies

2.5.1 Implementation Approach

FSR will be implemented with COTS products, preferably from a single vendor. The prime contractor may be the primary COTS vendor, or a system integrator in partnership with the primary COTS vendor.
All components of FSR will be implemented on such a schedule that the "black box" view of external interfaces holds. Otherwise, the boundaries delineated in Section 3.1.1 may have to be redefined.
FSR will run on a dedicated platform of hardware and operating system software. It will be sited at a CAO facility and operated by CAO personnel or by contractor personnel under CAO supervision. **The entire platform shall be replicated at an alternate site.** This is a mandatory requirement.

2.5.2 House Infrastructure

This section lists specific facilities and technologies supported, or planned to be supported, by the infrastructure of the House. The intent is to give potential bidders of the FSR contract an initial view of how their products can be configured to meet the requirements in this specification. Please ask if you do not see what you expected.

Security

Infrastructure support for security includes the following:

1. SecurID is supported with RSA's SecurID Server, version 5.1.0.
2. Secure Enclave Authentication Manager will be supported with *Netegrity SiteMinder*, version 5.5.
3. Integration with Microsoft Windows 2000 Active Directory
4. Public Key Infrastructure (PKI) is under study.

Recoverability

It is difficult to specify recoverability without considering platform. Generally FSR has two main options for hardware redundancy. One uses a cluster of two nodes sharing stable storage to provide a hot standby within the same facility. The other uses two machines at geographically separate computing facilities with the primary replicating its database to the secondary in near real time. It would be nice to have both a local hot standby for speed and a remote alternate site for survivability. This specification takes the alternate site approach.
Infrastructure support for recoverability includes the following:

1. System must integrate with the House storage and backup systems consisting of an EMC Symettrix SAN, SpectraLogic Gator 64000 tape libraries, and Veritas Data Center backup software.
2. Alternate sites.

Network

Communications Policy 001.0, approved by CHA on 11/7/2000, requires that all network communications that travel outside of a single workgroup (or "subnet") and that are transported by shared House facilities shall use the Internet Protocol (IP).

General Description of the Communications Data Network (CDN)

House Information Resources (HIR) provides connectivity among six buildings occupied by House Members, staff, and support services. These buildings are the United States Capitol building (the Capitol), the Cannon House Office Building (CHOB), the Longworth House Office Building (LHOB), the Rayburn House Office Building (RHOB) and the Ford House Office Building (FHOB).

The U. S. House of Representatives has installed a large campus network between these six buildings and has standardized on Cisco network devices. The U. S. House of Representatives is in the process of upgrading its current Campus Data Network architecture to Gigabit Ethernet to replace the current ATM core. The new layered architecture consists of Core, Distribution and Aggregation Layer 2/3 switches and will be deployed in order to support a delivery of high bandwidth applications to the desktop (e.g., streaming video). The CDN extends to the Member and Committee offices through

10/100 Mbps switches and will connect Member Offices to the Gigabit Ethernet Aggregation Layer.

General Description of the WAN

The U.S. House of representatives has a large Frame Relay network consisting of 6 muli-megabit circuits supplying connectivity to Remote District Offices. Each Muli-megabit circuit consists of 8 T-1 circuits for 12Mbps each. Campus head quarter circuits support over 740 remote Frame

Connections to Remote District Offices. The current District Office breakdown is 442 512Kbps circuits, 91 256Kbps circuits and 212 56Kbps circuits.

The U.S. House of Representatives also supports 50 multi-user Offices and 44 single user offices with a Virtual Private Network (VPN) service. This service uses the Cisco 1720/1721 client and software client for multi-user offices and single user offices respectively. It is anticipated that over 200 satellite offices and 100 individual users will be provided with a VPN connection service to the House Network. These VPN connections will provide remote access to House resources via the public Internet. Hardware and Software clients will be deployed to supply this service.

General Description for the House's Internet Connection
The U.S. House of Representatives currently uses redundant Internet Connections (T-3) from diverse providers. Each Internet connection is capped at 27Mbps. There are plans to increase the Houses connections to a mixture of OC-3 and T-3 connections to take into account increased Internet demand.

Systems and Client
The systems operating environment at the Ford House Office Building consists of over 200 servers, approximately 85% are Windows based systems running on HP/Compaq ProLiant servers. The remaining servers consist of UNIX based systems running on Sun and Intel hardware platforms. The Windows based systems currently operate on both NT 4.0 and Windows 2000 operating systems; however, all NT 4.0 servers will be upgraded to Windows 2000 in FY04 and well into FY05. HIR also maintains an IBM 390/2300 mainframe used to support specialized applications with non-mainframe migration replacement projects in progress. The systems operating environment supports a user base of approximately 12,000 Members and staff located on the Capitol campus and in District offices throughout the country.

3 Specific Requirements

Each requirement consists of five parts: an identification for easy reference; a description; a priority code (M for *mandatory* or a rating between 1 and 3, with 3 being the most desirable); one or more verification methods (I for *inspection*, A for *analysis*, D for *demonstration*, and T for *test*); and cross-references to other requirements in this document or materials in other documents.
All requirements, mandatory or otherwise, are to be considered for vendor selection. To aid the evaluation process, a few requirements are presented as alternatives, goals, or requests for proposed solutions. They will be replaced with more definite language after vendor negotiations.

3.1 External Interface Requirements

The following requirements establish the boundaries of FSR as a black box.

3.1.1 External Systems

Appendix B describes the existing interfaces currently supported by applications and systems to be subsumed under FSR. Appendix C describes additional interfaces to be supported or utilized by FSR.

ID	Description	P[1]	V[2]	Ref
EI-010	**The system shall support the external interfaces described in Appendix B.** The contractor is encouraged to investigate using more modern technologies for these existing interfaces. The use of XML, for example, is highly desirable in a business-to-business (B2B) environment even if it is not acceptable to some parties.	M	T	App. B
EI-011	**The system shall support or utilize the external interfaces described in Appendix C.**	M	T	App. C
EI-012	**The contractor shall propose a solution for interfacing to existing or new Document Management Systems.**	M	A	C.1
EI-013	**The contractor shall propose a solution for interfacing to existing or new Workflow Engines.**	M	A	C.5
EI-014	Provide an automated interface with Treasury and OMB for transmission of standard reports and download of data as required (e.g., FACTS reporting, IPAC, GOALS).	M	A	
EI-015	Provide automated interface development tools to support rapid development of new interfaces as required.	3	A	
EI-016	Provide the ability to import data from structured sources such as Excel spreadsheets, ODBC compliant databases, and flat files (both delimited and fixed length).	M	A	

3.1.2 Users and Administrators

ID	Description	P	V	Ref
EI-020	**The system shall service its end users via Web servers exclusively. The system shall support the following Web browsers:** • ***Microsoft Internet Explorer*, version 6.0.2 and later** • ***Netscape*, version 6.2.3 and later.**	M	I D	SA-020 SA-022
EI-021	**The system shall support its administrators and power users via Web servers, proprietary interfaces, or a combination of both.**	M	I D	SA-020 SA-022

3.2 Functional Requirements

Not applicable. Refer to [Reference 1.4-3].

[1] Priority code. See Section 3.
[2] Verification method. See Section 3.

3.3 Performance Requirements

The following requirements specify FSR throughput and response time.

ID	Description	P	V	Ref
PE-010	The system shall be capable of supporting 600 interactive users and 20 batch users concurrently. Each interactive user is a remote client; each batch user is a source of batched transactions. This requirement is to be verified on a dedicated platform over the House network. By *dedicated platform* is meant only those software and hardware components that are actually required for the verification. Specifically, no *ad hoc* queries of the databases are to be executed during the verification.	M	T	PE-011 SA-070
PE-011	The system shall be capable of under-three-second response time for 95 percent of interactive transactions. By *95 percent* is meant that interactive users get, on the average, 95 out of 100 transactions completed within the amount of time specified. This requirement is to be verified concurrently with PE-010 in the same session or sessions. The contractor shall identify transaction types that, due to their processing requirements, cannot meet the response time threshold specified above. For these transactions, the system shall inform users of their progress every ten seconds.	M	T	PE-010
PE-012	The system's databases shall be sized to allow for six years of financial records. **The volume of such records shall be calculated from actual usage by the systems to be replaced by FSR.**	M	A	SA-071

3.4 Logical Database Requirements

ID	Description	P	V	Ref
LD-010	**The system shall support storage of large binary objects such as images.**	M	T	
LD-011	**The system shall be capable of encrypting all or part of FSR databases with *Triple DES*, AES or comparable encryption methods.**	3	D	

3.5 Design Constraints

ID	Description	P	V	Ref
DE-09	System shall be capable of Multi-tier architecture (e.g., Database Server (database redundancy), Data Broker (Web Server redundant and load balanced), and User			

	Interface Web Browser			
DE-010	**The contractor shall provide a flexible, scalable, and modular system that can easily accommodate changes in business processes and number of concurrent users.**	M	A	

3.6 System Attributes

3.6.1 Security

The following requirements specify user authentication and secure communications. They apply to end users, administrators, and classes of users yet to be defined as described in 2.5.2 House Infrastructure.

ID	Description	P	V	Ref
SA-020	**The system shall authenticate its users on the House network, whether they are interactive or batch, remote or local.** By *authenticating* a user is meant that the system knows the user's identity. The authentication mechanism shall be compatible with the House infrastructure described in Section 2.5.2 (Security).	M	T	2.5.2 (Security)
SA-022	The system shall be capable of secure communications with its users on the House network. The secure communication mechanism shall be compatible with the House infrastructure described in Section 2.5.2 (Security). **Specifically, the FSR Web site shall be a secure Web site using 128-bit SSL encryption or better.** Its URL starts with **https** instead of **http**.	M	T	2.5.2 (Security)
SA-023	The system shall integrate with Microsoft Windows 2000 Active Directory using user name, password, and groups	3	I	2.5.3 (Security)
SA-024	The system shall make it possible for FSR administrators to control all user access to its databases and files. As a minimum, access shall be granted or denied on the basis of *named user* and *user group*; access shall be granted or denied at the *transaction, table*, *view*, or *file* level; access modes shall include *read*, *write*, *execute*, and *no access*. **User groups are expected to match roles.**	M	T	
SA-025	The system shall utilize security mechanisms currently supported or planned by the House infrastructure, e.g., those depicted in the scenarios in Appendix D.	M	T	SA-020 SA-022 App. D

	These mechanisms include need-to-know and timeout. By *need-to-know* it is meant users can only see what they need in order to do their jobs. Timeout is intended to reduce the risks posed by workstations left unattended.			
SA-026	Need-to-know parameters and timeout limits shall be adjustable by FSR administrators as required.	M	T	SA-025
SA-027	The system shall digitally sign all Java applets, if any, in its Web pages.	M	D	EI-020
SA-028	The system shall allow administrators, but no end users or power users, to execute SQL commands directly. **Execution of SQL commands shall be logged by the Database Management System (DBMS) component of FSR. Such SQL session logs shall follow the same retention schedule as other audit logs.**	M	D	SA-082
SA-029	The system shall manage passwords in compliance with [Reference 1.4-5].	M	D	HISPOL
SA-030	Support both centralized and decentralized security as well as a mixed model, where some security functions are centralized and others decentralized.	M	T	
SA-031	Provide the capability to support use of electronic and/or digital signatures (e.g., workflow) to authorize payments and other system actions.	M	T	

3.6.2 Reliability

The ability of a system or component to perform its required functions under stated conditions for a specified period of time.

ID	Description	P	V	Ref
SA-038	The system shall, in the case the database becomes unavailable, roll back all transactions approved or not, to ensure reliable data.	M	I A	
SA-044	The system shall be capable of continued baseline operation when routine maintenance or upgrades are performed.	M	I A	
SA-047	The system shall be capable of analytic redundancy (e.g., the system is partitioned into a high-assurance portion and a high-performance portion - The high-assurance application kernel is designed to ensure simplicity and reliability)	V	I	

3.6.3 Availability

The following requirements specify operational availability for FSR.

ID	Description	P	V	Ref
SA-032	The system shall be capable of supporting a 7 X 24 operation with 95 percent availability. By *7 X 24* is meant 7 days a week, 24 hours a day. Availability is calculated as MTBF / (MTBF + MTTR) where MTBF = mean time between failures MTTR = mean time to repair. For acceptance testing of this requirement, the *run-for-record* period shall be 60 days, i.e., availability shall be calculated over this entire period.	M	T	
SA-033	The system shall be capable of operating in a clustered environment.			

3.6.4 Recoverability

The following requirements specify failover parameters for FSR.

ID	Description	P	V	Ref
SA-040	**Following a catastrophic event that renders its primary site non-operational, the system shall be capable of automatically switching over to its alternate site and become fully operational within 24 hours.** The switchover mechanism or mechanisms shall be compatible with the House infrastructure described in Section 2.5.2.2. Following a switchover, the system is **not** required to automatically reestablish any connections or sessions active before the failure.	M	T	2.5.2.2

3.6.5 Transactional Properties

The following requirements specify transactional semantics and the batching of transactions. They have profound effects on data integrity, recovery, and migration.

ID	Description	P	V	Ref
SA-050	**The system shall maintain the ACID properties (atomicity, consistency, isolation, and durability) of its transactions, interactive and batched, as targeted in a *Transaction Processing Performance Council* benchmark [**http://www.tpc.org/information/sessions/sigmod/tsld013.htm**]** The ACID properties imply, among other effects, that a	M	T	

	committed transaction is a durable transaction to be recovered from any and all failure modes. It is understood there exists a window of vulnerability between the moment a user hits the key to submit a transaction and the moment the system logs that transaction to stable storage. If a transaction is not successfully logged, it cannot be recovered. **This "commit latency" shall not exceed 100 milliseconds on the House network.**			
SA-051	**The system shall accept batched transactions in the form of 7-bit ASCII transaction files. For each interactive transaction <u>type</u> it provides, the system shall also provide one equivalent batch transaction type or an equivalent sequence of batch transaction types.**	M	T	
SA-052	The system shall apply each transaction, either interactive or batched, at most once. This requirement does not apply to those transactions that the system knows are idempotent.	M	T	
SA-053	**The system shall be capable of capturing raw transactions in its transaction file format or formats.**	M	T	SA-051

3.6.6 Maintainability

The following requirements enhance the maintainability of the FSR platform.

ID	Description	P	V	Ref
SA-060	**FSR's requirements shall be satisfied without any modifications to the source code or binary code of its COTS products. Exceptions shall be considered on a case-by-case basis.** Making use of *hooks* documented by vendors is not considered exceptions.	M	I	2.5.1
SA-062	**The contractor shall provide relevant database schemas to the House.** A schema includes table definitions, column constraints, and indices. The intent is to facilitate writing database queries.	M	I	
SA-063	**The contractor shall propose a comprehensive set of documentation for FSR <u>before</u> contract award.** This set shall include documentation of every item customized for FSR in every phase of the contract performance, including requirements, design, implementation, integration, test, training, deployment, operation and maintenance.	M	I	

3.6.7 Portability

The following requirements provide for attributes of software that relate to the ease of porting the software to other host machines and/or operating systems.

ID	Description	P	V	Ref
SA-065	**Application servers shall run on platforms with Unix or Microsoft Windows operating systems only.**	M	I A	2.4.2
SA-068	**Web Technology shall support industry standard portable languages and protocols adopted by internet related standards organizations such as:** • Internet Engineering Task Force (IETF) • World Wide Web Consortium (W3C) • Internet Society (ISOC) • The Internet Corporation for Assigned Names and Numbers (ICANN) • Organization for the Advancement of Structured Information Standards(OASIS)	M	I A	2.4.2
SA-069	**The system shall be interoperable with internet based languages (This pertains specifically to the web architecture tier). (e.g., HTML and XML)**	M	I A	

3.6.8 Scalability

The following requirements provide for scaling up FSR as load increases over time.

ID	Description	P	V	Ref
SA-070	**The platform for FSR shall be so architected that, simply by adding more hardware, the system can be made capable of supporting 900 interactive users and 20 batch users concurrently without degrading response time.** By *platform* is meant the combination of hardware and operating system software.	M	A	PE-010 PE-011
SA-071	**The platform for FSR shall be so architected that, simply by adding more hardware, the system's databases can be made capable of supporting 4,000 users and six years of financial records without degrading performance.**	M	A	SA-070 PE-012

3.6.9 Auditability

The following requirements specify logging activities in support of independent audits of FSR. This logging is totally separate from that carried out by transaction processing and database management software for their purposes.

ID	Description	P	V	Ref
SA-080	The authentication component of FSR shall log all user accesses. **As a minimum, log records shall (a) support the reconstruction of each session's username, session start, and session end and (b) identify changes to a user's security profile.**	M	I	
SA-081	**The application component of FSR shall log all user transactions, including** • **Additions, changes, and deletions submitted by individual users** • **Additions, changes, and deletions initiated by automated processes of the system.** Examples of automated processes are *month-end close* and *year-end close*. • ***Override events***[3] **requiring user intervention.**	M	I	SA-028
SA-082	**Audit logs shall be retained on line for administrator defined period of time and transaction type. (e.g., security access changes or transaction code changes)** By *on line* is meant instantaneous read access.	M	I	SA-080 SA-081 SA-028

3.6.10 Usability

The following requirements enhance *fit for use* and *ease of use* for FSR users.

ID	Description	P	V	Ref
SA-100	**The system shall be conformant with the usability goals in Appendix E.** It is difficult to quantify usability. Given the implementation approach in Section 2.5.1, conformance shall be judged by a panel of users before acquisition.	M	D	2.5.1 App. E

[3] For example, a user attempts to create an order for a closed accounting period or to amend one. The system has been configured to prohibit automatic processing of such transactions, because the accounting period is closed. Thus manual intervention is required to process such transactions, permitting oversight and exceptions to routine controls. These exceptions need to be tracked by the system: who did what and when.

3.7 Migration and Transition Requirements

3.7.1 Data Conversion

The following requirements specify the conversion of data from existing systems to FSR.

ID	Description	P	V	Ref
MT-010	Data shall be converted from existing systems solely as regular transactions processed by production code. The intent is to make data conversion verifiable since it uses production code that has gone through provisional acceptance testing. Special-purpose code extracts data from existing files and databases, and formats them into batches of regular transactions. These batches are then applied in a certain sequence to populate the new databases.	M	D	SA-051
MT-011	**The process of data conversion shall be repeatable.** The extracting and formatting steps shall not be dependent on the contents of existing files and databases.	M	D	MT-010
MT-012	**The tools that perform data conversion shall allow it to be restricted to a time interval between the present and an arbitrary point of time in the past.** The intent is to archive or warehouse old data of merely historical interest, not to populate the new databases with them.	M	A	
MT-013	**The state of all converted data shall stay logically the same after conversion.** For example, if an item is in the state of *awaiting approval* before conversion, it shall be in the same state or an equivalent state after conversion.	M	D	

3.8 Operation and Maintenance Requirements

The following requirements specify aspects of the operation and maintenance of FSR.

3.8.1 Backup and Recovery

The following requirements specify regular system backup to enable recovery from disaster and data corruption.

ID	Description	P	V	Ref
OM-010	**The system shall automatically replicate FSR operational files and databases to an alternate site in near real time**.	M	D	EI-012
OM-011	**The system shall automatically back up FSR operational files and databases to tape on House approved schedule.**	M	D	EI-012

OM-012	**The backup and recovery process should be testable without interrupting on-line production.**	M	D	
OM-013	Provide the ability to archive data on a user-specified basis for each type of item (e.g., completed purchase orders greater than 6 years old) and provide the ability to access archived data. This should include at least the following: Contracts and related information, purchase requests, solicitations, awards (simplified purchases and contracts), orders (task and delivery), blanket purchase agreements (BPA), BPA calls, receipts of goods and services, invoices, payment documents, billing/receivable documents, cash receipt documents, write-off transactions, and budget transactions.	M	D	
OM-014	Provide the ability to permanently purge archive data on a user-specified basis for each type of item.	M	D	

3.9 JFMIP Requirements

The following requirements specify JFMIP requirements associated with the FSR.

Requirement Number	Requirement Description	Rank	Priority	Change Comments
Requirements Category: Ad Hoc Online Data Access/Reporting				
SYS-T-62	Allow real-time access to data for query and reporting.	3.92	M	
SYS-T-64	Allow the information contained in the system to be queried by table or column and viewed on line to present specific data as requested.	3.67	M	
SYS-T-70	The system has drill-down capability, which allows a user to drill down from summary data to detail data.	3.62	M	
SYS-T-67	Provide the ability to notify recipients of report distribution using e-mail.	3.08	VA High	
SYS-T-68	Provide for automated telephone query for various standardized, commonly requested inquiries (such as vendor invoices).	1.77	VA Med	
Requirements Category: Data Back-up and Recovery				
SYS-S-21	Provide safeguards to avoid or prevent damage of the accounting data from such events as operator errors, simultaneous changes, or system failures.	3.81	M	
SYS-S-22	Provide the capability to automatically back out all incomplete transactions, restore the system to its last consistent state, and reapply transactions that have not been successfully posted since the last back up.	3.73	M	
SYS-S-23	System can be integrated with the current House tape backup and recovery system (Veritas).			
Requirements Category: Data Integrity and Synchronization				
SYS-S-15	Prevent the alteration of financial data except through the posting of transactions that are entered through the normal edit and update process under proper security.	3.88	M	
SYS-S-16	Ensure that the system maintains records on system use, including the actions of every user on all terminals, the time and date of use, and the type of transaction by user-id.	3.75	M	

Requirement Number	Requirement Description	Rank	Priority	Change Comments
SYS-S-18	Maintain and report history of all changes to tables.	3.75	M	
SYS-S-13	Provide a transaction identification scheme which allows the transaction in the system to be traced to the source document.	3.67	M	
SYS-S-14	Provide a facility for tracing the status of documents. The documents may or may not be posted in the accounting records.	3.60	M	
SYS-S-19	Maintain productivity statistics about application usage.	3.13	VA High	
SYS-S-17	Automatically synchronize and balance files and accounts.	4.00	M	Priority Changed from VH (3.40) to Mandatory in session
Requirements Category: Database Management				
SYS-T-21	Application should support SQL-compliant API.	4.00	M	
SYS-T-22	Application should follow SQL database standards.	4.00	M	
SYS-T-18	Application is capable of cascading updates and deletions.	3.93	M	
Requirements Category: Document Management Standards				
SYS-D-02	Provide capability to support Open Document Management Architecture.	3.64	M	
SYS-D-06	Provide capability to support Open Document Architecture/Open Document Interface Format (ODA/ODIF).	3.54	M	
SYS-D-01	Provide capability to support Document Management Alliance (DMA).	4.00	M	Priority Changed from VH (3.45) to Mandatory in session
Requirements Category: Ease of Use and Integration/Flexibility				
SYS-T-47	Support use of user-defined business rules/validation in all modules.	3.92	M	
SYS-T-33	Provide context-sensitive help screens.	3.86	M	
SYS-T-34	Indicate mandatory entry fields on input screens.	3.79	M	
SYS-T-36	Provide consistency in commands, dialog windows, data structures, information presentation, and operands between subsystems/modules.	3.79	M	
SYS-T-39	Provide the ability to display a preview of a document, report, form, or query upon user request prior to printing.	3.79	M	
SYS-T-46	Provide menu-driven functions that are simple and straightforward.	3.79	M	
SYS-T-53	Application should be easily integrated with other systems, using standards-based application interfaces to facilitate integration.	3.77	M	
SYS-T-45	Provide completion notifications when running reports or processing information.	3.71	M	
SYS-T-51	The application is easily upgradeable.	3.64	M	
SYS-T-38	Provide ability to get a new record from a list by scrolling or by typing in only part of an entry.	3.50	M	

Requirement Number	Requirement Description	Rank	Priority	Change Comments
SYS-T-43	Provide "tool tips" for buttons which indicate the purpose of the button.	3.14	VA High	
SYS-T-50	Uses industry standard development tools that are capable of managing object-oriented technology.	3.00	VA High	
Requirements Category: Electronic Approvals				
Requirements Category: Electronic Data Exchange				
SYS-T-28	Supports EDI translation compliant with ANSI X-12 standards and federal implementation conventions.	3.77	M	
SYS-T-29	Support ability to export and import data to and from PC desktop applications.	3.50	M	
SYS-T-25	Support COLD (Computer Output to Laser Disk), COOL (Computer Output On Line) storage/retrieval of documents.	4.00	M	Priority Changed from VH (3.43) to Mandatory in session
SYS-T-27	Support electronic interfaces for credit card transactions.	4.00	M	Priority Changed from VH (3.27) to Mandatory in session Derived from JFMIP requirement SYS-T-27
Requirements Category: Electronic Mail Integration				
SYS-D-12	Provide for electronic notification to payees (vendors, travelers, etc.) of payments made by disbursing offices. Allow for agency flexibility in defining message contents.	3.67	M	
Requirements Category: General				
Requirements Category: System Architecture/Platform Performance				
SYS-T-05	Production client environment for all modules is 32-bit Microsoft Windows compatible operating system.	3.94	M	
SYS-T-13	Support simultaneous data entry/access by multiple users in a variety of modes (e.g. direct access, remote).	3.71	M	
Requirements Category: System Data Access				
SYS-S-03	Provide system administrator and specifically authorized users with control over data editing criteria.	4.00	M	
SYS-S-06	Limit access to specific data files and/or programs to authorized users using controlled system access methods.	4.00	M	
SYS-S-08	Access control should be established to support internal control requirements.	4.00	M	
SYS-S-02	Control individual user access to specific transactions. Parameters limiting users' authority to access and perform specific transactions will be controlled by the system or security administrator.	3.94	M	
SYS-S-04	Allow authorized personnel to add, change, or delete records.	3.94	M	
SYS-S-05	Limit user access by accounting classification code structure by various modes including 1) read-only access, 2) read and input access, 3) read and approval authorization, and 4) read, input, and approval authorization.	3.94	M	

Requirement Number	Requirement Description	Rank	Priority	Change Comments
SYS-S-10	Provide user identifications and passwords for authentication at both the system and application levels. Passwords should be non-printing and non-displaying. Passwords should be stored in an encrypted form.	3.94	M	
SYS-S-12	Provide restrictions on sensitive data such as social security numbers.	3.94	M	
SYS-S-11	Provide the ability to query the audit log by type of event, event date, user identification, etc.	3.87	M	
Requirements Category: Workflow Messaging				
SYS-D-25	Provide on-line query capability and customizable queries to track the status of transactions through the workflow process.	3.69	M	
SYS-D-21	Provide capability for authorized users to modify workflow routings on an as-needed basis, for example proxy authority.	3.50	M	
SYS-D-24	Provide support capability to define workflow processes, business rules, including approval levels, using a graphical definition facility.	3.08	VA High	
SYS-D-22	Define and assign message priorities based on user-defined criteria.	2.93	VA High	
Requirements Category: WWW/Fax Enabled				

4 Requirements Traceability Matrix

Not applicable. [Reference 1.4-1] specifies no requirements specification to which this one is subordinate.

Appendix A. Definitions, Acronyms, and Abbreviations

A	Analysis (verification method)
ACID	Atomicity, consistency, isolation, durability
ADA	Americans with Disabilities Act
AES	Advanced Encryption Standard
Atomicity	Atomicity is a property encompassing two concepts: totality and serializability. If an atomic action completes successfully, then the action requested has taken place everywhere. If the action fails anywhere, it takes place nowhere. This is totality. Serializability requires that the effects of executing several operations concurrently be equivalent to the effects if they are executed in some sequential order.
B2B	Business-to-business
CAO	Chief Administrative Officer
COTS	Commercial off-the-shelf
D	Demonstration (verification method)
DMZ	DeMilitarized Zone
DSS	Digital Signature Standard
FIPS	Federal Information Processing Standards
FRB	Federal Reserve Bank
FSR	Financial System Replacement
FTP	File Transfer Protocol
HIR	House Information Resources
I	Inspection (verification method)
ICD	Interface Control Document
IEEE	The Institute of Electrical and Electronics Engineers, Inc.
JFMIP	Joint Financial Management Improvement Program
M	Mandatory (requirement)
MCBA	Multiple Computer Business Application
MTBF	Mean time between failures
MTTR	Mean time to repair
OBE	Overtaken By Events
PKI	Public Key Infrastructure
SAN	Storage Area Network
SQL	Structured Query Language
SSL	Secure Socket Layer

T	Test (verification method)
TBD	To be determined
TBR	To be resolved
TBS	To be supplied
WWW	World Wide Web

Appendix B. Existing External Interfaces

B.1 Boise Cascade

Current Interface	Boise Cascade (BCOP)
Interface with FSR?	The interface with this consolidated billing vendor will be required upon implementation of the FSR.
Purpose	The Boise Cascade interface is an automated process for receipt and payment of invoices from Boise Cascade, which supplies office products to the House through an on-line ordering system. The interface processes an electronic invoice file, a back order file and a funding limits file that are transferred from Boise Cascade to FFS. The files are processed in FFS to generate a report to be displayed on Document Direct, enabling individual House Organizations to access an electronic version of their detailed billing statement. The same files are processed to create a payment voucher document in FFS that will result in an electronic payment to the vendor.
Media/File Transfer Method and/or Protocols	Three files are FTP'd from Boise Cascade to the NBC DMZ Server. Upon email notification, the House Operations staff then transfers the files from the server to the FFS mainframe.
File Format	Fixed record length and column width (ASCII flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source members associated with these processes are HROORPT and HROOINV. The layout for the invoice file is in the BCOPREC copylib member.
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	Invoice File: 34 record length/minimal number of records Back Order File: 44 record length/100-200 records on average Funding Limit File: 188 record length/ 500 records per month on average.
ICD Reference/ Design Documents	Boise Cascade interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\On-Line Ordering (BCOP)
Contact Information	Systems contact: Deana Hess Program Office contact: Lee Harrington Interfacing System Contact: Karo Nerenberg (1.800.942.6473)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\On-Line Ordering (BCOP)
Notes	

B.2 Perrier Group

Current Interface	Bottled Water
Interface with FSR?	The interface with this consolidated billing vendor will be required upon implementation of the FSR.
Purpose	The Bottled Water interface is an automated process for receipt and payment of invoices from Perrier Group, which supplies bottled water and associated products to the House. The interface processes an electronic invoice file transferred from Perrier Group to FFS. The file is processed in FFS to generate a report to be displayed on Document Direct, enabling individual House Organizations to access an electronic version of their detailed billing statement. The same file is processed to create a payment voucher document in FFS that will result in an electronic payment to the vendor.

Media/File Transfer Method and/or Protocols	The file is emailed from the Perrier Group to the House. The House Operations staff then transfers the file from to the FFS mainframe.
File Format	Fixed record length and column width (ASCII flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source members associated with these processes are HRBWRPT and HRBWINV. The layout for the invoice file is in the BWREC copylib member.
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	191 record length/1200 records per month on average.
ICD Reference/ Design Documents	Bottled Water interface design for FFS side on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\Bottled Water Interface
Contact Information	Systems contact: Deana Hess Program Office contact: Kenny Burch Interfacing System Contact: Jodi Crandall (1.800.727.8448 ext. 8598)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\Bottled Water Interface
Notes	

B.3 UPS

Current Interface	United Parcel Service (UPS)
Interface with FSR?	The interface with this consolidated billing vendor will be required upon implementation of the FSR.
Purpose	The UPS interface is an automated process for receipt and payment of invoices from UPS, which provides package delivery services to the House. The interface processes an electronic invoice file transferred from UPS to FFS. The file is processed in FFS to generate a report to be displayed on Document Direct, enabling individual House Organizations to access an electronic version of their detailed billing statement. The same file is processed to create a payment voucher document in FFS that will result in an electronic payment to the vendor.
Media/File Transfer Method and/or Protocols	The file is transferred to the FFS mainframe.
File Format	Fixed record length and column width (ASCII flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source members associated with these processes are HRUPSRP and HRUPSIN. The file layout is in the UPSREC copylib member.
Frequency	Weekly
Estimated Volume or Record Size and Number of Records	712 record length/300 records per week on average.
ICD Reference/ Design Documents	UPS interface design for FFS side on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\UPS Interface
Contact Information	Systems contact: Deana Hess Interfacing System Contacts: Kathy Cusin (202.675.4224) Barbara Lee (916.386.3953)
Reference to	S:\Common\Financial Systems\FFS Enhancements\Interfaces\UPS

Functional Requirements	Interface
Notes	

B.4 Fed Ex

Current Interface	Federal Express (FedEx)
Interface with FSR?	The interface with this consolidated billing vendor will be required upon implementation of the FSR.
Purpose	The House has implemented FedEx Direct Link consolidated billing software and an interface process for the receipt and payment of invoice files generated by FedEx, which provides package delivery services to the House. The interface processes an electronic invoice file transferred from to FFS. The file is processed in FFS to generate a report to be displayed on Document Direct, enabling individual House Organizations to access an electronic version of their detailed billing statement. The same file is processed to create a payment voucher document in FFS that will result in an electronic payment to the vendor. The FFS Source members associated with these processes are HRFXRPT and HRFEDEX.
Media/File Transfer Method and/or Protocols	The file is retrieved from the House Network by the House Operations staff and then transferred to the FFS mainframe.
File Format	Fixed record length and column width (ASCII flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source members associated with these processes are HRFXRPT and HRFEDEX. The layout for the invoice file is in the FEDEXREC copylib member.
Frequency	Weekly
Estimated Volume or Record Size and Number of Records	1272 record length/1000 records per week on average.
ICD Reference/ Design Documents	FedEx interface design for FFS side on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\FedEx interface
Contact Information	Systems contact: Deana Hess Program Office contact: Kenny Burch Interfacing System Contact: Marty Hall (410.551.6147)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\FedEx interface
Notes	

B.5 Cingular

Current Interface	Cingular Interactive
Interface with FSR?	The interface with this consolidated billing vendor will be required upon implementation of the FSR.
Purpose	The Cingular interface is an automated process for receipt and payment of invoices from Cingular Interactive, which supplies Blackberry products and services to the House. The interface processes an electronic invoice file transferred from Cingular to FFS. The file is processed in FFS to generate a report to be displayed on Document Direct, enabling individual House Organizations to access an electronic version of their detailed billing statement. The same file is processed to create a payment voucher document in FFS that will result in an electronic payment to the vendor.
Media/File Transfer	The file is retrieved from Cingular by the House Operations staff via FTP

Method and/or Protocols	and then transferred to the FFS mainframe.
File Format	Fixed record length and column width (ASCII flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source members associated with these processes are HRCIRPT and HRCIINV. The layout for the invoice file is in the CIREC copylib member.
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	210 record length/1900 records per month on average.
ICD Reference/ Design Documents	Cingular interface design for FFS side on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\Cingular Interface
Contact Information	Systems contact: Deana Hess Program Office contact: Lee Harrington Interfacing System Contact: Mike Sullivan (732.602.5822)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\Cingular Interface
Notes	

B.6 Transit

Current Interface	Transit
Interface with FSR?	An interface with this internal Organization will be required upon implementation of the FSR.
Purpose	To generate payment transaction to pay Metro vendor for employee Metro transportation cards.
Media/File Transfer Method and/or Protocols	The file is sent via email to Accounting, verified, saved to the House common drive and then the Operations staff FTPs the file to the NBC mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	53 character record length/340 records per month on average.
ICD Reference/ Design Documents	Transit documentation available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\Transit Interface
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Lisa Phillips (Accounting)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\Transit Interface
Notes	

B.7 Treasury

Current Interface	Treasury
Interface with FSR?	An interface for Treasury disbursements will be required upon implementation of the FSR.
Purpose	To report check disbursement data to Treasury for check printing by Treasury.

Media/File Transfer Method and/or Protocols	Host-to-host file transfer with NACHA format, Connect Direct
File Format	Three fixed record length and column width (flat file).
File-Translation Protocols	Custom software in FFS
Frequency	Files sent a couple of times per month
Estimated Volume or Record Size and Number of Records	FFS Vendor Check File- 65 bytes length/about 5000 records per month. FMS Employee Check File-65 bytes length/about 175 records per month. Member Check File-65 bytes length/about 10 records per month.
ICD Reference/ Design Documents	
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Patti Mattimore, Peter Baier, Frank Milasi
Reference to Functional Requirements	References may be found in email messages stored in the following: S:\Common\Financial Systems\FFS Enhancements\EFT Implementation\FRB, ACH, Treasury
Notes	

B.8 FRB

Current Interface	Federal Reserve Board (FRB)
Interface with FSR?	The FRB interface is required upon implementation of the FSR.
Purpose	To facilitate the automated disbursements of payments to vendors, and non-payroll reimbursements to members and employees.
Media/File Transfer Method and/or Protocols	FRB Software must reside on an isolated PC with an encryption board and no connection to the House network. File transfers occur over a modem dial-up connection.
File Format	Two ASCII fixed length flat files that are blocked. (No CLRF).
File-Translation Protocols	Custom software that generates the FRB files.
Frequency	Daily
Estimated Volume or Record Size and Number of Records	Employee File – 94 character record length/ 650 records daily on average Non-employee File – 94 character record length/ 650 records daily
ICD Reference/ Design Documents	FRB reference information may be found on House common drive: S:\Common\Financial Systems\FFS Enhancements\EFT Implementation\FRB, ACH, Treasury
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Becky Neilson (Accounting)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\EFT Implementation\FRB, ACH, Treasury
Notes	

B.9 Payroll

Current Interface	Payroll (Lawson)
Interface with FSR?	An interface with this internal Organization will be required upon implementation of the FSR.
Purpose	To record the payroll transactions in the Financial system.
Media/File Transfer Method and/or Protocols	Direct transfer from the House mainframe to the NBC mainframe. Will most likely change with implementation of new Lawson Payroll system (see notes below).
File Format	Three fixed record length and column width (flat) files.
File-Translation	Custom software in FFS

Protocols	
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	Vendor File - 151 character record length/ 200 records per month Detail File -154 character record length/ 15,000 records per month Adjustment File - 154 character record length/ 40 records per month
ICD Reference/ Design Documents	Payroll interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\Lawson Payroll Interface
Contact Information	Systems contact: Deana Hess Current Interfacing System Contact: Frank Milasai (FMS Payroll) New Interfacing System Contact: Denise Cornwell (Lawson Payroll)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\Lawson Payroll Interface
Notes	Conversion to Lawson to occur in 2004

B.10 FAIMS

Current Interface	FAIMS Daily Interface
Interface with FSR?	There will be a temporary interface with FAIMS since this system will be subsumed by FSR, but not in the initial implementation.
Purpose	FAIMS daily interface sends payment transactions on a daily basis.
Media/File Transfer Method and/or Protocols	Direct FTP from FAIMS server (UNIX workstation) to NBC mainframe
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source member associated with this process is HRFAPV. The layout for the file is in the FAIMSREC copylib member.
Frequency	Daily
Estimated Volume or Record Size and Number of Records	257 record length. Under 50 records on average.
ICD Reference/ Design Documents	FAIMS interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\FAIMS interface
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Kevin Boyle (HSS)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\FAIMS interface
Notes	

B.11 FAIMS Monthly

Current Interface	FAIMS Monthly Interface
Interface with FSR?	There will be a temporary interface with FAIMS since this system will be subsumed by FSR, but not in the initial implementation.
Purpose	FAIMS monthly interface sends a variety of general ledger update transactions on a monthly basis. Transactions include asset-related

	activity (depreciation, asset transfers and disposals), estimated obligations to decrease budgetary available for offices based on projected repayment-plan and maintenance-plan costs, and expense transfers between various House offices and HSS' revolving fund. The HSS side is currently posted as an expenditure reduction. In the new system, this may be posted as revenue. This is a management decision. The expense transfers are for actual expenses associated with repayment plans and maintenance plans.
Media/File Transfer Method and/or Protocols	Direct FTP from FAIMS server (UNIX workstation) to NBC mainframe
File Format	Fixed record length and column width (flat file). Three separate files from three separate sources are all transmitted at the same time.
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS. The FFS Source member associated with this process is HRFAHV. The layout for the file is in the FAIMSREC copylib member.
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	257 record length. Approximately 15,000 records per month for all 3 files combined.
ICD Reference/ Design Documents	FAIMS interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\FAIMS interface
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Kevin Boyle (HSS)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\FAIMS interface
Notes	

B.12 PIX

Current Interface	Photo Studio (PIX)
Interface with FSR?	An interface with this internal Organization will be required upon implementation of the FSR.
Purpose	The Photography/House Graphics application and associated database reside on a server named CTS, which is managed by HIR. The Photography/House Graphics billing application referred to as “PIXTRAN” interfaces with FFS to generate transactions that will record internal expense transfers to charge Offices with billable accounts for services performed on their behalf by the Photo Studio.
Media/File Transfer Method and/or Protocols	Manual FTP between House mainframe and NBC Mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	40 character record length/ 500 records per month on average
ICD Reference/ Design Documents	PIX interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\PIX-Graphics Interface 2003
Contact Information	Systems contact: Deana Hess

	Interfacing System Contact: Janet Conrad (CTS); Dolly Seelmeyer (PIX)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\PIX-Graphics Interface 2003
Notes	

B.13 HRS/House Recording Studio

Current Interface	House Recording Studio (HRS)
Interface with FSR?	The interface with this internal Organization will be required upon implementation of the FSR.
Purpose	To generate transactions that will record internal expense transfers to charge Offices for services performed on their behalf by the Recording Studio.
Media/File Transfer Method and/or Protocols	Manual FTP by the Recording Studio between House mainframe and NBC Mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	69 character record length/ 60 records per month on average
ICD Reference/ Design Documents	?
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Lisa Phillips (Accounting)
Reference to Functional Requirements	?
Notes	

B.14 Telecom/MONIES

Current Interface	Telecommunications (OTX)
Interface with FSR?	An interface with this internal Organization will be required upon implementation of the FSR.
Purpose	To generate transactions that will record internal expense transfers to charge Offices for telecommunications charges paid to Vendors on consolidated statements that cover all the House Offices.
Media/File Transfer Method and/or Protocols	Manual FTP by Telecomm between House mainframe and NBC Mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	35 character record length/8700 records per month on average.
ICD Reference/ Design Documents	OTMIS interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\Telecom Interface
Contact Information	Systems contact: Deana Hess Interfacing System Contacts: Maggie Mitchell and Sharyn Alexander

Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\Telecom Interface
Notes	

B.15 OSS/Office Supply Store

Current Interface	Office Supply Store (OSS)
Interface with FSR?	The interface with this internal Organization will be required upon implementation of the FSR.
Purpose	To generate transactions that will record internal expense transfers to charge Offices for office supply purchases and services.
Media/File Transfer Method and/or Protocols	Manual FTP by the Office Supply Store between House mainframe and NBC Mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	222 character record length/ 500 records per month on average
ICD Reference/ Design Documents	?
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Tom Coyne (OSS)
Reference to Functional Requirements	?
Notes	

B.16 Student Loan Program

Current Interface	Student Loan
Interface with FSR?	An interface with this internal Organization will be required upon implementation of the FSR.
Purpose	To generate payment transactions to pay loan holders for Student Loans.
Media/File Transfer Method and/or Protocols	File is emailed to Operations staff and then transferred to the NBC mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	97 character record length/about 1700 records per month.
ICD Reference/ Design Documents	Student Loan interface design for FFS side available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\ Student Loan Program
Contact Information	Systems contact: Deana Hess Current Interfacing System Contact: Frank Milasi (FMS) New Interfacing System Contact: Denise Cornwell (Lawson)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\Student Loan Program

Notes	

B.17 Graphics

Current Interface	Graphics
Interface with FSR?	The interface with this internal Organization will be required upon implementation of the FSR.
Purpose	The Photography/House Graphics application and associated database reside on a server named CTS, which is managed by HIR. The Photography/House Graphics billing application referred to as “PIXTRAN” interfaces with FFS to generate transactions that will record internal expense transfers to charge Offices for services performed on their behalf by the Graphics Group.
Media/File Transfer Method and/or Protocols	Manual FTP by the Graphics group between House mainframe and NBC Mainframe.
File Format	Fixed record length and column width (flat file).
File-Translation Protocols	Custom software that builds input transactions that are loaded to FFS
Frequency	Monthly
Estimated Volume or Record Size and Number of Records	40 character record length/ estimated 150 records per month
ICD Reference/ Design Documents	Interface design available on House common drive: S:\Common\Financial Systems\FFS Enhancements\Interfaces\PIX-Graphics Interface 2003
Contact Information	Systems contact: Deana Hess Interfacing System Contact: Janet Conrad (CTS); Terry Rowe (Graphics)
Reference to Functional Requirements	S:\Common\Financial Systems\FFS Enhancements\Interfaces\PIX-Graphics Interface 2003
Notes	

Appendix C. New External Interfaces

C.1 Document Management

Current Interface	
Interface with FSR?	
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.2 Electronic Data Exchange

Current Interface	
Interface with FSR?	
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.3 Electronic Mail Integration

Current Interface	
Interface with FSR?	
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.4 Data Access

Current Interface	
Interface with FSR?	
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.5 Workflow Messaging

Current Interface	
Interface with FSR?	
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.6 WWW/Fax Enabled

Current Interface	
Interface with FSR?	
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.7 Pitney Bowes

Current Interface	

Interface with FSR?	Interface considerations should be discussed prior to FSR selection.
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.8 Fed Tax

Current Interface	
Interface with FSR?	An interface link will be required upon implementation of the FSR.
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.9 Goals

Current Interface	
Interface with FSR?	An interface link will be required upon implementation of the FSR.
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation	

Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.10 IPAQ

Current Interface	
Interface with FSR?	An interface link will be required upon implementation of the FSR.
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	
Contact Information	
Reference to Functional Requirements	
Notes	

C.11 MCBA

Current Interface	
Interface with FSR?	Interface considerations should be discussed prior to FSR selection.
Purpose	
Media/File Transfer Method and/or Protocols	
File Format	
File-Translation Protocols	
Frequency	
Estimated Volume or Record Size and Number of Records	
ICD Reference/ Design Documents	

Contact Information	
Reference to Functional Requirements	
Notes	

Appendix D. Web Interface Scenarios

The following scenarios are intended to demonstrate certain security aspects of the Web interface for the purpose of establishing FSR security requirements. They are not design requirements. Since the CAO is considering several approaches to Web security, several possibilities are presented below.

D.1 Digital Certificates

Each user is expected to possess a digital certificate acceptable to FSR. Digital signatures are affixed to transactions in accordance with the Digital Signature Standard (DSS) specified in Federal Information Processing Standards (FIPS) Publication 186 [http://www.itl.nist.gov/fipspubs/fip186.htm]. The digital signature is derived from **both** the user's certificate **and** the transaction.

D.1.1 Submitting Transactions

A user goes through the following steps to submit a transaction:

1. The user starts an FSR-supported Web browser on a machine connected to the House network.
2. The user hits the FSR secure site. This action causes a series of activities to occur:
   - An FSR Web server responds by sending its digital certificate to the user's Web browser, which authenticates it.
   - The Web server stores the Web browser's IP address as part of the session state. The Web server checks every subsequent message from the Web browser against the stored IP address. If it does not match, the Web server will abort the session.
   - The Web server asks the Web browser for a digital certificate (as it is configured to do so).
   - The Web browser asks the user to select one of the available certificates and enter the *passphrase* that protects it.
   - The user enters the correct passphrase.
   - The Web browser sends the selected certificate to the Web server.
   - The Web server authenticates the user and informs the FSR application of the user's identity. (From this point on, we refer to the combination of Web server and FSR application as the server.)
   - The server sends a menu of functions this user is authorized to perform.
3. The user selects the function for submitting transactions.
4. The server sends a menu of transaction types this user is authorized to submit.
5. The user selects one of the transaction types.
6. The server sends a form and, at the same time, starts a timer to keep track of elapsed time.
7. The user begins filling out the form and signs the completed transaction with his or her digital certificate.
8. Either the user submits a transaction or cancels it, or the Web server times him or her out.

- If the transaction is submitted, the server will process it and returns a response. Back to Step 4 for the next transaction.
- If the user exceeds the time limit allowed for this activity, the server will abort the transaction. Back to Step 2 for re-authentication.

D.1.2 Approving Transactions

A user goes through the following steps to approve a transaction. The user may have been alerted to the presence of this transaction via email as a result of FSR workflow processing.

1. Same as D.1.1-1.
2. Same as D.1.1-2
3. The user selects the function for approving transactions.
4. The server sends an ordered list of transactions this user is expected to approve.
5. The user selects one of the transactions.
6. The server sends the selected transaction to the user and, at the same time, starts a timer to keep track of elapsed time.
7. The user begins reviewing the selected transaction.
8. Either the user approves or disapproves the selected transaction, or the server times him or her out.
   - If the user approves or disapproves the selected transaction, he or she will select the appropriate option to sign it accordingly. The user will send the signed transaction to the server. The server will then accept or reject it. Back to Step 4 for the next transaction.
   - If the user exceeds the time limit allowed for this activity, the server will abort the transaction approval or disapproval. Back to Step 2 for re-authentication.

D.2 Secure Enclave Authentication Manager

Netegrity SiteMinder, version 5.5 or later, is a commercial product using proprietary protocols.

SiteMinder accepts multiple authentication mechanisms including username and password, *SecureID* [Section C.3], and digital certificates. It lets administrators apply a weight to each mechanism and assign a minimum score for access to a particular Web page. When a user hits a secure page, *SiteMinder* challenges the user with one or more authentication mechanisms whose total weights satisfy the score demanded for that page. The following Web page gives an overview of this product:
`http://www.netegrity.com/products/index.cfm?leveltwo=SiteMinder&levelthree=HowItWorks`

D.2.1 Submitting Transactions

Same as D.1.1 if digital certificates are used; undefined otherwise.

D.2.2 Approving Transactions

Same as D.1.2 if digital certificates are used; undefined otherwise.

D.3 SecureID

SecureID is an enhanced username and password mechanism. It is based on "two-factor authentication," something the user knows, such as a password, plus something the user possesses, such as a key card that generates a new token every 60 seconds. An authentication server validates this changing token.

Of the alternatives described in this appendix, *SecureID* is the only one currently in use at the CAO.

Appendix E. Usability

The following table lists the usability goals and their relative weights between 1 and 5, with 5 being the most desirable. The intent is to help a panel of users evaluate candidate products for *ease of use* and *fit for use*.

Goal	Weight
1. The system presents information resulting from system queries in a structured format to facilitate the understanding of the information.	4
2. The system presents friendly and configurable error messages that help users understand processing errors and identify their sources.	4
3. Users can print an entire document or only selected pages of the document.	4
4. Administrators can create or modify help screens.	4
5. Users can print error messages displayed on screen.	4
6. Users can readily export data on screen to PC-based applications such as Microsoft Windows Office suite of products.	4
7. Users can *undo* and *redo* multiple times before posting a transaction.	4
8. Administrators can configure system-generated reports and forms to be printed automatically or on demand.	4
9. The system reports processing progress on screen, e.g., with a progress bar or clock.	4
10. The system is compliant with Rehabilitation Act/Section 508.	5
11. Users do not have to scroll horizontally to see entire width of window on 800x600 screens.	4
12. Administrators can change how an FSR Web page looks, e.g., with the use of *style sheets.*	5
13. System can display and export data in both plain ASCII text and static HTML.	4

Appendix F. Requirements History

The following table is from [Table 2, Section 3, Reference 1.4-2]. The original requirement numbers are retained for traceability. Requirements in this table are brought up to date as follows:

- **Removed** for being identical to JFMIP requirements (i.e., those without the *-HR-* designation), for being overtaken by events (OBE), or for lack of specificity.
- **Replaced** with other requirements in other sections of this specification. References to the replacements are provided.
- **Moved** to an FSR or FSR-related *functional* requirements specification.

Requirement Number	Requirement Description	Rank	Priority	Change Comments
Requirements Category: Ad Hoc Online Data Access/Reporting				
SYS-HR-102	REPLACED WITH 2.4-1			
SYS-HR-135	REPLACED WITH E-1			
SYS-HR-086	MOVED TO FUNCTIONAL REQUIREMENTS REQUIREMENTS CONCERNING AN ARCHIVE OR DATA WAREHOUSE FOR AD HOC QUERIES AND OTHER DECISION SUPPORT ACTIVITIES WILL BE ADDRESSED BY A RELATED SYSTEM SUCH AS FINMART.			
SYS-HR-089	SAME AS SYS-HR-086			
SYS-HR-136	REPLACED WITH FILE TRANSFER PROTOCOL ENTRIES IN APPENDIX B			
SYS-HR-101	SAME AS SYS-HR-086			
SYS-HR-137	REPLACED WITH ADMINISTRATOR PROFILE IN SECTION 2.3			
Requirements Category: Data Back-up and Recovery				
Requirements Category: Data Integrity and Synchronization				
SYS-HR-113	REPLACED WITH SA-081			
SYS-HR-109	MOVED TO FUNCTIONAL REQUIREMENTS			
SYS-HR-110	REPLACED WITH SA-050 AND SA-081			
SYS-HR-060	SAME AS SYS-HR-110			
Requirements Category: Database Management				
SYS-HR-114	REPLACED WITH CONSTRAINT 2.4-1			

Requirement Number	Requirement Description	Rank	Priority	Change Comments
SYS-HR-066	SAME AS SYS-HR-086			
SYS-HR-073	SAME AS SYS-HR-086			
SYS-HR-070	REPLACED WITH LD-010			
SYS-HR-067	SAME AS SYS-HR-086			
Requirements Category: Document Management Standards				
SYS-HR-001	REPLACED WITH EI-012			
SYS-HR-041	REPLACED WITH EI-012			
SYS-HR-025	REPLACED WITH EI-012			
SYS-HR-024	REPLACED WITH EI-012			
SYS-HR-026	REPLACED WITH EI-012			
SYS-HR-042	REPLACED WITH EI-012			
SYS-HR-105	REPLACED WITH EI-012			
SYS-HR-002	REPLACED WITH EI-012			
SYS-HR-028	REPLACED WITH EI-012			
SYS-HR-032	REPLACED WITH EI-012			
SYS-HR-029	REPLACED WITH EI-012			
SYS-HR-005	REPLACED WITH EI-012			
SYS-HR-027	REPLACED WITH EI-012			
SYS-HR-106	REPLACED WITH EI-012			
Requirements Category: Ease of Use and Integration/Flexibility				
SYS-HR-119	REMOVED FOR OBE SEE EI-020			
SYS-HR-120	REPLACED WITH SA-060, SA-061, AND SA-062			
SYS-HR-121	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-122	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-123	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-083	REMOVED FOR OBE			
SYS-HR-124	REPLACED WITH COMBINATION OF SA-028 AND SA-051			
SYS-HR-126	REPLACED WITH PROTOCOL ENTRY IN C.2			
SYS-HR-125	REPLACED WITH E-2			
SYS-HR-127	REPLACED WITH E-3			

Requirement Number	Requirement Description	Rank	Priority	Change Comments
SYS-HR-129	REPLACED WITH E-4			
SYS-HR-128	REPLACED WITH E-5			
SYS-HR-130	REPLACED WITH E-12			
SYS-HR-131	REPLACED WITH E-6			
SYS-HR-132	REMOVED FOR OBE SEE EI-020			
SYS-HR-133	REPLACED WITH E-7			
SYS-HR-134	REPLACED WITH E-8			
SYS-HR-082	REPLACED WITH E-9			
Requirements Category: Electronic Approvals				
SYS-HR-019	MOVED TO FUNCTIONAL REQUIREMENTS			
SYS-HR-014	MOVED TO FUNCTIONAL REQUIREMENTS			
SYS-HR-016	MOVED TO FUNCTIONAL REQUIREMENTS			
SYS-HR-015	MOVED TO FUNCTIONAL REQUIREMENTS			
SYS-HR-017	REPLACED WITH APPENDIX D			
SYS-HR-018	REPLACED WITH APPENDIX D			
Requirements Category: Electronic Data Exchange				
SYS-HR-074	REPLACED WITH C.2			
Requirements Category: Electronic Mail Integration				
SYS-HR-008	REMOVED FOR OBE			
SYS-HR-108	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-007	REPLACED WITH EI-012			
SYS-HR-011	REPLACED WITH EI-012			
SYS-HR-009	REPLACED WITH EI-012			
SYS-HR-107	REPLACED WITH EI-020 This requirement will be updated with browsers on wireless devices, if any.			
SYS-HR-010	REPLACED WITH EI-012			
Requirements Category: General				
SYS-HR-116	REPLACED WITH DE-010			

Requirement Number	Requirement Description	Rank	Priority	Change Comments
Requirements Category: System Architecture/Platform Performance				
SYS-HR-064	REPLACED WITH 2.5.2.3			
SYS-HR-115	REPLACED WITH CONSTRAINT 2.4-2			
SYS-HR-063	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-117	REPLACED WITH EI-020 AND EI-021			
SYS-HR-118	REPLACED WITH E-10			
Requirements Category: System Data Access				
SYS-HR-049	REPLACED WITH SA-029			
SYS-HR-053	REPLACED WITH SA-029			
SYS-HR-112	REPLACED WITH SA-029			
SYS-HR-050	REPLACED WITH APPENDIX D			
SYS-HR-051	REPLACED WITH SA-029			
SYS-HR-054	REPLACED WITH SA-022			
SYS-HR-055	REPLACED WITH SA-029			
SYS-HR-056	REPLACED WITH APPENDIX D			
SYS-HR-052	REPLACED WITH C.4			
SYS-HR-043	REMOVED FOR LACK OF APPLICABILITY			
MT-020	**Deleted – not system requirement - policy**			
SA-061	**Deleted - because it is not a sys requirement it is a contractual issue.**			
SYS-HR-061	REPLACED WITH C.4			
SYS-HR-058	REPLACED WITH LD-011			
SYS-HR-046	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-057	REPLACED WITH APPENDIX D			
SYS-HR-048	REMOVED FOR LACK OF SPECIFICITY			
SYS-HR-045	REPLACED WITH POWER USER PROFILE IN SECTION 2.3			
Requirements Category: Workflow Messaging				
SYS-HR-111	REPLACED WITH COMBINATION OF EI-013 AND C.5			
SYS-HR-033	REPLACED WITH COMBINATION OF EI-013 AND C.5			

Requirement Number	Requirement Description	Rank	Priority	Change Comments
SYS-HR-034	REPLACED WITH COMBINATION OF EI-013 AND C.5			
Requirements Category: WWW/Fax Enabled				
SYS-HR-036	REPLACED WITH EI-020 AND SA-022			
SYS-HR-035	REPLACED WITH EI-020			
SYS-HR-039	REPLACED WITH EI-020			
SYS-HR-037	REPLACED WITH EI-021			
SYS-HR-104	REPLACED WITH C.6			
SYS-HR-040	REPLACED WITH VARIOUS PROTOCOL ENTRIES IN APPENDIX C			